ON Semiconductor®

Final Product/Process Change Notification

Document #:FPCN23882X
Issue Date:03 Aug 2021

Title of Change:	Qualification of Additional Bump and Backgrind Operation in ASE Kaohsiung, Taiwan and Test Operation In ON Semiconductor Shenzhen, China for WLCSP package, NCP136xFCRCxxxT2G, NCP59771xFCRCxxxT2G devices (Case outline 567YU). Addition of Aizu Fujitsu Semiconductor Manufacturing located in Aizuwakatmatsu, Japan as Wafer Fab
Proposed First Ship date:	10 Nov 2021 or earlier if approved by customer
Contact Information:	Contact your local ON Semiconductor Sales Office or Marek.Haluska@onsemi.com
PCN Samples Contact:	Contact your local ON Semiconductor Sales Office or <PCN.samples@onsemi.com>. Sample requests are to be submitted no later than 30 days from the date of first notification, Initial PCN or Final PCN, for this change. Samples delivery timing will be subject to request date, sample quantity and special customer packing/label requirements.
Additional Reliability Data:	Contact your local ON Semiconductor Sales Office or Vladislav.Hrachovec@onsemi.com
Type of Notification:	This is a Final Product/Process Change Notification (FPCN) sent to customers. FPCNs are issued 90 days prior to implementation of the change. ON Semiconductor will consider this change accepted, unless an inquiry is made in writing within 30 days of delivery of this notice. To do so, contact PCN.Support@onsemi.com
Marking of Parts/ Traceability of Change:	Affected products will be traceable by date code.
Change Category:	Wafer Fab Change, Assembly Change, Test Change
Change Sub-Category(s):	Manufacturing Site Addition

Sites Affected:

ON Semiconductor Sites	**External Foundry/Subcon Sites**
ON Semiconductor Aizu, Japan	ASEKH, Taiwan (Kaohsiung)
ON Semiconductor Shenzhen, China	

Description and Purpose:

Capacity expansion for WLCSP packages. Upon PCN effectivity affected devices may be sourced from any of the qualified supply chain flows.
Bump & backgrind processing will be located in ASE Kaohsiung, Taiwan (ASEKH).
Probe & post processing will be located in ON Semiconductor, Shenzhen, China (ONSC).
Addition of Aizu Fujitsu Semiconductor Manufacturing located in Aizuwakatmatsu, Japan as Wafer Fab option for these parts.

Future voltage options of this product family will be sourced from any of these qualified supply chain combinations.
The change will apply to all devices shown in the affected part list (below).

	Before Change Description	**After Change Description**
Wafer Fab	ON Semiconductor Gresham, North America|United States|Oregon	ON Semiconductor Aizu , Asia|Japan|Fukushima; ON Semiconductor Gresham, North America|United States|Oregon
Bump & backgrind site	JCAP, Asia|China|Jiangsu	ASEKH, Asia|Taiwan|Kaohsiung; JCAP, Asia|China|Jiangsu
Probe & post process site	JCAP, Asia|China|Jiangsu	ONSC Semiconductor, Asia|China|Shenzhen; JCAP, Asia|China|Jiangsu
Bump composition	JCAP: Pure Sn	JCAP: Pure Sn ASEKH: 98.2 % Sn + 1.8 % Ag
Polyimide material	JCAP: HD4100	JCAP:HD4100 ASEKH:HD4000E

Reliability Data Summary:

QV DEVICE NAME: NCP136AFCRC080T2G, NCP136AFCRC040T2G
RMS: 76296,76297,76298
PACKAGE: WLCSP 6

Test	Specification	Condition	Interval	Results
HTOL	JESD22-A108	Ta=125°C, 100 % max rated Vcc	1008 hrs	0/80
HTSL	JESD22-A103	Ta= 150°C	1008 hrs	0/240
TC	JESD22-A104	Ta= -40°C to +125°C	850 cyc	0/240
HAST	JESD22-A110	130°C, 85% RH, 18.8psig, bias	96 hrs	0/240
uHAST	JESD22-A118	130°C, 85% RH, 18.8psig, unbiased	96 hrs	0/240
PC	J-STD-020 JESD-A113	MSL 1 @ 260°C	3x reflow	0/240
PD	JESD22-B100	Per case outline	Cpk>1.67	0/90
SBS	AEC-Q100-010	Solder Ball Shear	Cpk>1.67	0/15
ED	ON Data Sheet	Electrical Distributions	Cpk>1.67	0/60

QV DEVICE NAME: SCY99247 /NCP136 (AIZU Die qualification)
RMS: S68182
PACKAGE: WLCSP-6

Test	Specification	Condition	Interval	Results
HTOL	JESD22-A108	Ta=125°C, 100 % max rated Vcc	1008 hrs	0/240
HTSL	JESD22-A103	Ta= 150°C	1008 hrs	0/240
TC	JESD22-A104	Ta= -40°C to +125°C	850 cyc	0/160
HAST	JESD22-A110	130°C, 85% RH, 18.8psig, bias	96 hrs	0/160
uHAST	JESD22-A118	130°C, 85% RH, 18.8psig, unbiased	96 hrs	0/160
PC	J-STD-020 JESD-A113	MSL 1 @ 260°C	3x reflow	0/480
ESD	JESD22-A114	Human Body Model	2kV	Pass
ESD	JESD22-C101	Charge Device Model	1kV	Pass
LU	AEC-Q100-004	Dynamic Latch-up	LU+>100mA LU->100mA	Pass
PD	JESD22-B100	Per case outline	Cpk>1.67	0/60
SBS	AEC-Q100-010	Solder Ball Shear	Cpk>1.67	0/10

Electrical Characteristics Summary:

Electrical characteristics are not impacted.

List of Affected Parts:

Note: *Only the standard (off the shelf) part numbers are listed in the parts list. Any custom parts affected by this PCN are shown in the customer specific PCN addendum in the PCN email notification, or on the* ***PCN Customized Portal****.*

Part Number	Qualification Vehicle
NCP59771AFCRCADJT2G	NCP136AFCRC040T2G
NCP136AFCRC080T2G	NCP136AFCRC040T2G
NCP136AFCRC040T2G	NCP136AFCRC040T2G

Appendix A: Changed Products

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Product	Customer Part Number	Qualification Vehicle	New Part Number	Replacement Supplier
NCP59771AFCRCADJT2G		NCP136AFCRC040T2G		